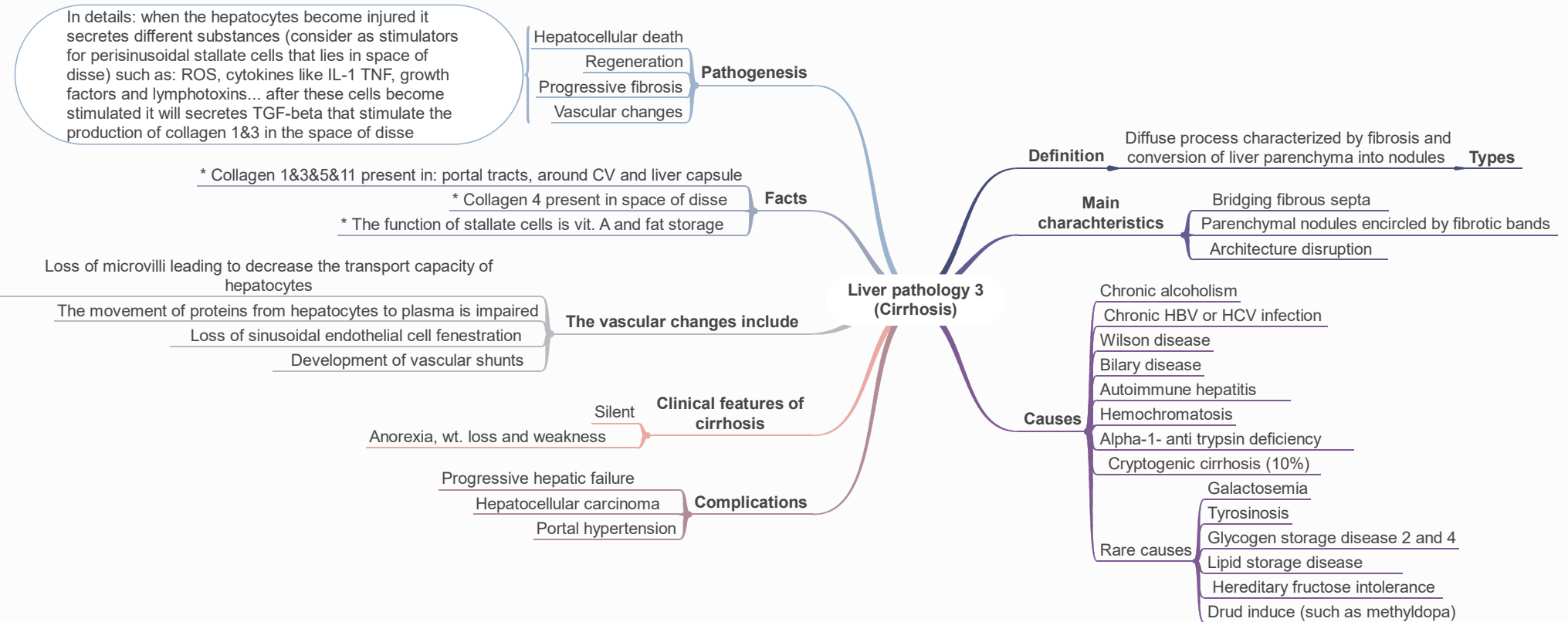


Liver pathology 3
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Liver pathology 3 (portal hypertension)

Pathogenesis

* Arterial-portal anastomosis develops in fibrous bands leading to increase the pressure in portal venous system & imposing arterial pressure on normally low-pressure portal venous system

* Increase the resistance of portal blood flow at the level of sinusoids & compression of CV by perivenular fibrosis and nodules

Causes

- Prehepatic
 - Portal vein thrombosis
 - Massive splenomegaly
 - Sever right sided heart failure
- Posthepatic
 - Constrictive pericarditis
 - Hepatic vein out flow obstruction
- Hepatic
 - Cirrhosis
 - Schistosomiasis
 - Massive fatty change
 - Diffuse granulomatosis as sarcoidosis, TB
 - Disease of portal microcirculation as nodular regenerative hyperplasia

Clinical consequences

- Ascitis
- Portosystemic shunts
- Hepatic encephalopathy
- Splenomegaly

Ascitis

- Definition** Collection of excess fluids in peritoneal cavity. It become detectable when at least 500 ml have accumulated
- Features**
 - Serous fluid
 - Neutrophils & RBCs
 - 3 g/ml of proteins (Albumin)
 - mesothelial cells and lymphocytes
 - Same concentration as blood of Na⁺, K⁺ and glucose
- Pathogenesis**
 - Increase in sinusoidal blood pressure
 - Hypoalbuminemia
 - Renal retention of water & Na⁺ due to secondary hyperaldosteronism
 - Leakage of hepatic lymph nodes into peritoneal cavity

Pathogenesis

Increase in portal venous pressure bypasses developed wherever the systemic & portal circulation share capillary beds

Portosystemic shunt

- Around and within the rectum --- Hemorrhoids
- Gastroesophageal junction --- Varices
- Falciform ligament of the liver (periumbilical and abdominal wall collateral) --- caput medusae
- Reteoperitoneum

Sites

occur in 65% of patients with advanced cirrhosis and cause a death in 50% of them due to upper GI bleeding

Splenomegaly

Not necessarily colerated with other features of portal hypertension

May results in hypersplenism

Pathogenesis

- sever loss of hepatocellular functions
- Shunt of blood around damage area

Hepatic encephalopathy

Neurological signs

- Rigidity
- Astrixia
- Hyper-reflexia
- Non specific EEG
- Brian edema and astrocytic reaction

leading to:

- Expose the brain to toxic metabolites
- Increase NH⁺ level in blood, leading to:
 - brain edema
 - Impaired neural function
 - Alteration in CNS AA metabolism